

REMARKS

Claims 13-25 are pending in this application. By this Amendment, claim 13 is amended and new claim 25 is added. Claim 13 is amended to address the teachings of U.S. Patent No. 6,764,665 to Deeba et al.

Support for the amendment to claim 13 can be found in the specification at page 9, lines 5-9 and page 17, lines 15-18. New claim 25 finds support in the specification at, for example, page 9, lines 23-26, page 20, lines 1-9 and page 21, lines 5-12. No new matter is added to the application by this Amendment.

Reconsideration of the application is respectfully requested.

I. Rejection Under 35 U.S.C. §102(e)

Claims 13-19, 21 and 22 were rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,764,665 to Deeba et al. This rejection is respectfully traversed.

The Patent Office alleges that Deeba et al. discloses all of the features recited in claims 13-19, 21 and 22. Applicants disagree.

Nowhere does Deeba et al. disclose a catalyst body having a porous carrier that consists essentially of aggregate particles bonded to each other, an oxide film unavoidably formed from material of the aggregate particles on a part of the surface of the aggregate particles, and an oxide film protective layer formed of a material which does not form low-melting glass with the alkali metal and/or alkali earth metal used as a NO_x trap catalyst that is further disposed on the oxide film so as to coat at least a part of the oxide film as required by amended claim 13.

Deeba et al. discloses a layered catalyst composite of the type generally referred to as a three-way conversion (TWC) catalyst having the capability of simultaneously catalyzing the oxidation of hydrocarbons and carbon monoxide and the reduction of nitrogen oxides (see

Abstract of Deeba et al.). Further, Deeba et al. discloses that the TWC catalyst may include three layers and that each of the three layers may have a promoter, such as one or more non-reducible oxides of one or more rare earth metals selected from the group consisting of lanthanum, praseodymium, yttrium, zirconium and mixtures thereof (see col. 6, lines 6-9, lines 32-35 and lines 63-67). Moreover, Deeba et al. discloses that the first layer and the third layer may have oxygen storage components that include ceria, a mixed oxide of cerium and zirconium and a mixed oxide of cerium, zirconium and neodymium (see col. 5, lines 63-65 and col. 6, lines 52-56). Thus, Deeba et al. discloses a catalyst having plural layered catalysts formed by coating respective catalyst layers on a carrier made of, for example, cordierite.

Contrary to Deeba et al., the amended claim 1 requires a catalyst body having

- (1) a porous carrier that consists essentially of aggregate particles bonded to each other,
- (2) an oxide film unavoidably formed from material of the aggregate particles on a part of the surface of the aggregate particles, and (3) an oxide film protective layer formed of a material which does not form low-melting glass with the alkali metal and/or alkali earth metal used as a NO_x trap catalyst that is further disposed on the oxide film so as to coat at least a part of the oxide film. With this construction, a carrier for providing a catalyst having a long lasting catalyst activity can be produced.

Deeba et al. fails to teach or suggest the use of a carrier of metal particles as aggregates. To one of ordinary skill in the art, Deeba et al. merely teaches that a metal monolithic structure is composed of a metallic corrugated sheet (see column 1, lines 34-38 and col. 5, lines 25-35 of Deeba et al.) Further, Deeba et al. suggests forming an oxide film on the metal or metal alloy surface to improve corrosion resistance, which teaches away from the susceptibility to corrosion by the alkali or alkaline earth metals and adherence of the catalytically-promoting metal components to the carrier as taught in the present disclosure.

The present claims also require a NO_x trap catalyst that contains a component such as alkali metals and alkaline earth metals. Deeba et al. fails to teach or suggest a NO_x trap catalyst as recited in the present claims.

In addition, the present claims require a protective layer, for the oxide layer and Deeba et al. fails to teach or suggest such a protective layer. Also, the present claims require that the protective layer be made from a substance not forming a low-melting glass with the NO_x trap catalyst (alkali metal and/or alkali earth metal) and disposed so as to coat at least a part of the oxide layer, and Deeba et al. fails to disclose any such a protective layer. Finally, with regards to the type of catalyst, the present claims require a NO_x trap catalyst and Deeba et al. teaches a TWC catalyst with a first layer that is not comparable to the present protective film because the first layer should have at least a function as a catalyst, which requires a presence of various components such as barium therein.

As discussed above, the carrier of Deeba et al. is not the same as or similar to the carrier of the present claims because the carrier of the present claims includes a protective layer which coats, at least partially, the oxide film formed from the carrier material as a part of a carrier, and the NO_x trap catalyst. Deeba et al. fails to teach or suggest the recited oxide film protective layer and the recited NO_x trap catalyst as required in claim 13.

Thus, even if one of ordinary skill in the art were to have modified Deeba et al. as suggested by the Patent Office, the resulting combination still fails to teach or suggest the recited features of claim 13.

Finally, with respect to claim 22, in page 5 of the Office Action, the Patent Office acknowledges that Deeba et al. does not teach or suggest the features of claim 22. Therefore, Applicants respectfully request that this rejection with respect to claim 22 be withdrawn.

In view of the foregoing, Deeba et al. fails to disclose each and every limitation of independent claim 13, as amended, and thus cannot anticipate claim 13, or any of the

additional features recited in dependent claims 14-19, 21 and 22. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

II. Rejections Under 35 U.S.C. §103(a)

A. Deeba et al. in view of Matsuura et al.

Claims 13 and 20 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Deeba et al. in view of U.S. Patent No. 5,846,460 to Matsuura et al. This rejection is respectfully traversed.

Matsuura et al. teaches a silicon nitride porous body that contains a plurality of silicon nitride crystal grains with pores formed in grain boundary parts thereof, or includes a body part and a pore part wherein the body part is formed by a plurality of silicon nitride crystal grains and the pore part forms a three-dimensional network structure (see Abstract of Matsuura et al.). Additionally, Matsuura et al. teaches there is no possibility of having an oxide layer made of silicon nitride since the compact is washed with an acid or alkali (see Abstract Matsuura et al.).

Matsuura et al. does not remedy the deficiencies of Deeba et al. as described above with respect to claim 13. Specifically, Deeba et al. and Matsuura et al., taken singly or in combination, fail to teach or suggest a catalyst body having a porous carrier that consists essentially of aggregate particles bonded to each other, an oxide film unavoidably formed from material of the aggregate particles on a part of the surface of the aggregate particles, and an oxide film protective layer formed of a material which does not form low-melting glass with the alkali metal and/or alkali earth metal used as a NO_x trap catalyst is that further disposed on the oxide film so as to coat at least a part of the oxide film as recited in amended claim 13.

Even if one of ordinary skill in the art were to have modified Deeba et al. with Matsuura et al. as suggested by the Patent Office, the resulting combination fails to teach or suggest the recited features of claim 13.

In view of the foregoing, Deeba et al. and Matsuura et al., taken singly or in combination, fail to disclose each and every limitation of independent claim 13, as amended, and thus cannot anticipate claim 13, or any of the additional features recited in dependent claim 20 thereof. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

B. Deeba et al. in view of Dang et al.

Claims 13 and 22-24 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Deeba et al. in view of U.S. Patent No. 6,613,299 to Dang et al. This rejection is respectfully traversed.

Dang et al. teaches a catalyzed diesel particulate matter exhaust filter including a porous filter substrate for filtering the diesel particulate matter impregnated with a catalytic material which includes an alkaline earth metal vanadate and a precious metal (see Abstract).

Dang et al. fails to remedy the deficiencies of Deeba et al. as described above with respect to claim 13. Specifically, Deeba et al. and Dang et al., taken singly or in combination, fail to teach or to suggest a catalyst body having a porous carrier that consists essentially of aggregate particles bonded to each other, an oxide film unavoidably formed from material of the aggregate particles on a part of the surface of the aggregate particles, and an oxide film protective layer formed of a material which does not form low-melting glass with the alkali metal and/or alkali earth metal used as a NO_x trap catalyst that is further disposed on the oxide film so as to coat at least a part of the oxide film as recited in claim 13.

In view of the foregoing, Deeba et al. and Dang et al., taken singly or in combination, fail to disclose each and every limitation of independent claim 13, as amended, and thus

cannot anticipate claim 13, or any of the additional features recited in dependent claims 22-24 thereof. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

III. New Claim

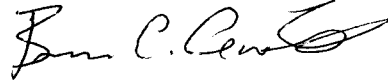
In addition to all the foregoing reasons, none of Deeba et al., Matsuura et al. and Dang et al., taken singly or in combination, teach or suggest a catalyst body wherein the aggregate particles include a main component comprising of at least one material selected from silicon metal, silicon carbide or a mixture thereof, as recited in claim 25.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 13-25 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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